

Middle Salmon River-Panther Creek Subbasin Assessment and TMDL



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EXECUTIVE SUMMARY

The Middle Salmon River-Panther Creek Subbasin Assessment and TMDL is a compilation of watershed characteristics, water quality standards, water quality concerns, and conclusions and recommendations for this watershed. The Draft Subbasin Assessment was completed in April 2000 and included information on 24 sub-watersheds that identified water quality concerns and status for 8 water bodies that included Big Deer Creek, Blackbird Creek, Bucktail Creek, Panther Creek, Diamond Creek, Dump Creek, Williams Lake, and the Salmon River.

The 1998 Idaho §303(d) list includes five streams brought forward from the 1994 §303(d) list. These streams are Big Deer Creek, Blackbird Creek, Bucktail Creek, and Panther Creek—all associated with metals contamination from the Blackbird Mine. Dump Creek is listed for sediment, and the Salmon River from the confluence of the Pahsimeroi to the confluence of the North Fork of the Salmon River is listed for unknown pollutants. Carmen Creek and that portion of Blackbird Creek above Blackbird Creek Reservoir were removed from the 1998 §303(d) list because they fully support their beneficial uses and the Salmon River is listed for unknown pollutants. Water bodies added to the 1998 §303(d) list are Williams Lake (listed for nutrients and low dissolved oxygen) and Diamond Creek (listed for unknown pollutants).

The Middle Salmon River-Panther Creek Subbasin Assessment makes recommendations to remove the Salmon River along its previously listed reach because it is in full support of its beneficial uses as evidenced by its fish community structure. It is in full support of its salmonid spawning and coldwater biota beneficial uses. Additionally the Subbasin Assessment identifies that Diamond Creek will not have a TMDL developed because it was listed in error based on a BURP site that was intermittent with a flow less than 1 cfs. Numeric water quality criteria do not apply to streams with less than 1 cfs (cubic ft. per second) flow, and Diamond Creek flow was recorded at 0.1 cfs at the time of sampling. Diamond Creek will be monitored further to determine its support status at lower elevation. If necessary the TMDL for Diamond Creek will be developed in 2006.

The Subbasin Assessment also identifies the ongoing EPA sponsored process that will ultimately result in a TMDL for metals contamination from the Blackbird Mine on Blackbird Creek, Big Deer Creek, Bucktail Creek, and Panther Creek and for pH and sediment on Big Deer Creek and Blackbird Creek. The Blackbird Mine sits in the saddle of a mountain ridge with mined areas affecting drainages on both sides. Because of the nature of the rock ore that has been mined, cobalt, arsenic, copper, iron and acid drainage are water quality concerns in the drainages. Past investigations at the Blackbird Mine Site by the State of Idaho, the U.S. Forest Service, the National Marine Fisheries Service, and others, done in part to support a claim of damages to natural resources, led to the conclusion that past and continuing releases of mining wastes produced by operation of the Blackbird Mine have resulted in unacceptable risks to human health and the environment. This resulted in decisions by EPA to prepare a Remedial Investigation/Feasibility Study (RI/FS) and to conduct non time-critical removal actions to alleviate or

reduce continuing threats to human health and the environment. The RI/FS and the non time-critical removal actions were governed by two Administrative Orders on Consent (AOC) between the Federal Government and responsible parties, the Blackbird Mine Site Group (BMSG). A Separate Consent Order was signed in September 1995 between the Natural Resource Trustees and the BMSG resulting from the Natural Resources Damage Assessment (NRDA) claims. The Consent Decree established natural resources restoration goals for Panther and Big Deer Creeks. This group manages the removal and restoration actions agreed upon in the AOC, through the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). This process seeks to find and implement long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

The BMSG is completing data collection for the RI/FS. A Record of Decision (ROD) will be drafted and negotiated after the completion of the RI/FS. This ROD will set the final concentrations of metals that the BMSG will then clean up to. The BMSG is also currently removing contaminated tailings piles at the site in accordance with the consent decree. The ROD was originally slated for signature in 2000. This was the assumption when DEQ and EPA agreed to do this Subbasin Assessment and TMDL in the 1996 court settlement. The ROD has been delayed because of the complex negotiations involved in the early removal action and preliminary work on the RI/FS. The ROD will set metals concentration for the impacted streams. The TMDL will result from these actions. DEQ will convert these concentrations into loads for the TMDL, and the actions outlined in the ROD will serve as the Implementation Plan for this aspect of the TMDL. When the ROD is signed by all parties involved and approved by EPA, the DEQ will amend the Middle Salmon Panther Creek Subbasin Assessment and TMDLs to reflect these changes.

The Subbasin Assessment also describes the water quality best management practices (BMPs) that, as of 1988, have been fully implemented by the USFS on Dump Creek prior to its §303(d) listing in 1994. Significant water quality improvements have been noted, and sediment recruitment has been greatly reduced. The Subbasin Assessment also identifies that the potential water quality improvements that these projects will bring to Dump Creek will take many years to be fully realized. Best management practices have been fully implemented on Dump Creek and no TMDL will be developed for Dump Creek.

Section two contains the Total Maximum Daily Load for Williams Lake that identifies load reductions for phosphorus from nonpoint sources in the Lake Creek watershed and from septic systems associated with recreational residences around the lake and the USFS campground on Williams Lake. In the typical year phosphorus loading to Williams Lake is estimated to be 2,850 kg of phosphorus, for an annual aerial loading rate of 3.9 g/m²/yr (3900 mg/m²/yr). Internal loading of phosphorus from sediment storage within the lake accounts for the vast majority of phosphorus loading in the lake at 76% (2175 kg). External sources had loads of: 16% (447 kg) from the inlet stream, 5% (133 kg) from septic systems, and 3% (70 kg) from overland flow and direct precipitation. External Phosphorus loading from

recreational residences, Williams Lake Resort and the USFS campground on Williams Lake directly to the lake must be eliminated (100% reduction) to eventually restore beneficial uses within Williams Lake. Additionally, a 30% reduction of phosphorus from the Lake Creek watershed above Williams Lake is allocated to restore beneficial use support within Williams Lake.

Implementation of improved septic systems on Williams Lake is nearing completion with homes on the shoreline already connected to combined or centralized systems, or having approved plans for construction of a combined system during 2001. Only the Williams Lake Resort and the USFS campground on Williams Lake are yet to be upgraded, or have plans developed to remove septic inputs from the lake. District 7 Health Department estimates the Resort phosphorus load to be in the excess of 20 homes (TMDL Comments). With completion of the Williams Lake Resort and USFS Williams Lake Campground upgrade a net reduction of 133 kg Total Phosphorus per year, or 4.7% of the total phosphorus load will be realized in accordance with load reductions identified in the Williams Lake Phase I Restoration Study. This equates to 50% of the deleterious phosphorus load reduction into the lake. The remaining 133 kg reduction (50%) is expected to come from the watershed with streambank stabilization, improvements in dispersed camping regulation, grazing and irrigation management, and road and trail maintenance. Other land management improvements may also be possible over time.

The Middle Salmon River- Panther Creek subbasin is not without natural disturbance that is difficult to anticipate or manage. During development of the Subbasin Assessment and TMDL a significant event occurred that effected access to the watershed and introduced uncertainty into the existing conditions being described in the assessment. On July 10th, 2000 a lightning caused wildfire began in the Clear Creek subwatershed that grew to be one of the largest wildfires in Idaho's recent history. Known as the Clear Creek Fire, it grew to encompass approximately 206,379 acres in the heart of the Panther Creek watershed. The Clear Creek fire was not declared to be 100% contained until October 13th, 2000 and was not declared to be controlled until snows fell in early November. On July 14th the Fernster Fire began with a lightning strike that eventually involved the lower Diamond Creek watershed. The Fernster fire totals 2,862 acres and was relatively quickly contained and controlled (USFS S-CNF, 2000).

Rehabilitation of known suppression disturbed sites within the Clear Creek Fire complex was completed and Burned-Area Emergency Rehabilitation (BAER) was mostly completed before weather conditions ended rehabilitation efforts for the 2000 season in mid-November 2000. The emphasis of rehabilitation efforts has been to prepare the land to mitigate the effects of spring runoff. The main rehabilitation goals are to enhance soils ability to absorb water and hold soil on the slopes, stabilize stream channels, and improve road drainage. Rehabilitation efforts within the Clear Creek Fire complex have included knapweed treatment, planting of riparian species along lower Panther Creek; spreading grass and forb seeds in identified areas; cross slope felling/placing of trees in steep areas; laying straw wattles that intercept silt and fine debris; and road work that includes clearing culverts and ditches. The Fernster complex has received knapweed treatments, seeding and limited channel clearing (USFS S-CNF 2000).

Of the total 206,379 acres burned approximately 70% of the fire area was unburned or burned at a low severity. Generally areas mapped as low burn severity have black ashes, intact grass, forb and shrub root systems, and no soil crusting. Approximately 25% of the fire area burned at a moderate severity. These areas would exhibit gray or mixed ash color, partially compromised root systems and some soil crusting. Approximately 5% of the area had a high burn severity. Areas of high burn severity have white or red ashes, completely compromised root systems, and significant amount of soil crusting. A review of the fire area by soil scientists showed that water repellency was exhibited to some degree in unburned sites and in areas that burned at varying intensities. Water repellency at many of these sites was judged to be due to high surface tension due to extremely dry soils. Very little hydrophobic soils were observed in the fire area. The water repellent and hydrophobic conditions are expected to have broken down as a result of the fall rains that occurred in the fire area in September and October. Only 1% of the area of the Fernster Fire complex was severely burned with no water-repellent soils created (USFS S-CNF 2000). Of special concern is protection of sediment basins that may contain toxic chemicals at the Blackbird mine.

Within the Clear, Trail and Big Deer Creek, and Blackbird Mine areas the fire was considered stand replacing. Many south slopes outside of these areas appeared to have been light to moderately burned. Over much of the area, fires burned leaving a mosaic pattern of (50:50) live and dead trees. Also, large blocks of understory burns were observed west of the Beartrack mine (IDFG 2000). Many of the south and west slopes were either lightly burned or unburned in the lower Panther Creek critical winter range. Some of the north and east timbered slopes in lower Garden Creek were burned out. The timbered areas of Hot Springs Creek, which were prescribed burned about 6 years ago, showed an understory burn (IDFG 2000).

Follow-up effectiveness monitoring will be conducted in accordance with a monitoring plan that will be developed by the USFS S-CNF. Monitoring will include water quality, riparian habitat, and instream fisheries habitat and stream channel dynamics. The Idaho Department of Environmental Quality will continue to conduct Beneficial Use Reconnaissance Program (BURP) monitoring on streams within the Panther Creek and Middle Salmon watershed.